

***Ramiphialis ronuroensis* gen. and sp. nov., a hyphomycete from the Amazonian rainforest**

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ABSTRACT—A new asexual ascomycete genus and species, *Ramiphialis ronuroensis*, was discovered on decaying leaves from Amazon rainforest in Brazil and is described and illustrated here. Morphologically, the fungus is distinguished by macronematous, monophialidic and multibranched, discrete, and terminal and intercalary conidiogenous cells that produce filiform to falcate, unicellular, hyaline conidia.

KEY WORDS—biodiversity, taxonomy, tropical fungi

Introduction

The discovery of new species is important to improve understanding of which and how many species will extinct (Costello & al. 2013). Although the Amazon occupies a prominent position in relation to global biodiversity, many species are disappearing due to the human actions. Studies on asexual fungi from Brazil have received more attention in Atlantic forest and Caatinga biomes (Barbosa & al. 2013, Fiuza & al. 2015, Santa-Izabel & Gusmão 2018). According to Sotão & al. (2004), little is known about asexual fungi in

Amazon. The northern region of the Amazon has more studies (Carmo & al. 2014, Castro & al. 2012, Hernandez-Gutierrez 2013, Monteiro & al. 2014) while in the southern region the investigations are still initial (Barbosa & al. 2015, 2017).

A survey of asexual ascomycetes on plant debris was carried out in the southern Amazon forest and an interesting fungus with branched conidiophores and phialidic conidiogenous cells is proposed here as a new genus and species.

Materials & methods

Samples of plant debris were collected in November 2016 at Rio Ronuro Ecological Station, Nova Ubiratã, Mato Grosso state (9°52'24"S 58°13'17"W) and placed in paper bags. In the laboratory, samples were washed and stored in moist chambers following Castañeda-Ruiz & al. (2016). After 72 h, the reproductive structures were mounted in PVL resin (polyvinyl alcohol, lactic acid, and phenol) and examined and photographed using a microscope equipped with phase contrast. Drawing was produced according Almeida & Gusmão (2015). The type specimen was deposited in the Herbario Centro-Norte Mato-Grossense, Sinop, Mato Grosso State, Brazil (CNMT).

Taxonomy

Ramiphialis F.R. Barbosa, Fiuza & R.F. Castañeda, gen. nov.

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Differs from *Atrosetaphiale* by its branched conidiophores, terminal phialides, and falcate conidia; from *Veramycina* by the absence of setae; and from *Jayarambhatia* by its conidiophores with extensions, discrete phialides, and falcate conidia.

TYPE SPECIES: *Ramiphialis ronuroensis* F.R. Barbosa & al.

ETYMOLOGY: Latin, *rami*, referring to the branched conidiophores; and *phialidis*, referring to the type of conidiogenous cells.

COLONIES scattered, dark brown. Mycelium superficial and immersed, composed of slightly branched, septate, smooth, brown hyphae. CONIDIOPHORES macronematous, mononematous, erect, straight or flexuous, branched, septate, with percurrent extensions, smooth, brown. CONIDIOGENOUS CELLS monophialidic, terminal and intercalary, discrete, determinate, pale brown. Conidial secession schizolytic. CONIDIA falcate, unicellular, hyaline accumulating in a white mucilaginous mass.

Ramiphialis ronuroensis F.R. Barbosa, Fiuza & R.F. Castañeda, sp. nov. Figs 1, 2

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Differs from *Atrosetaphiale flagelliformis* by its branched conidiophores, terminal phialides, and falcate conidia; from *Veramycina elegans* by the absence of setae; and from

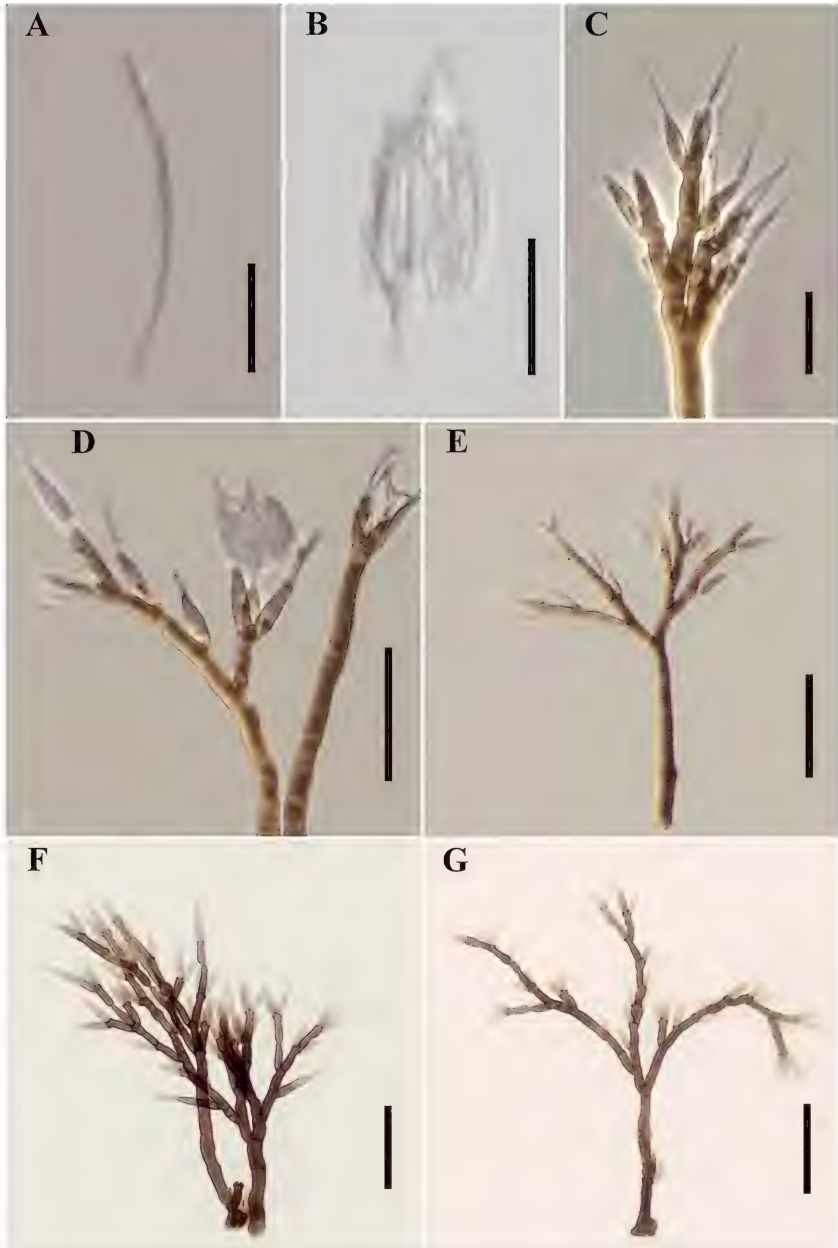


FIG. 1. *Ramiphialis ronuroensis* (holotype, CNMTf 80). A. Conidium; B. Conidia in mucilaginous mass; C, D. Conidiogenous cells and conidia; E–G. Conidiophores. Scale bars: A = 5 μm ; B = 10 μm ; C, D = 20 μm ; E = 40 μm ; F, G = 50 μm .

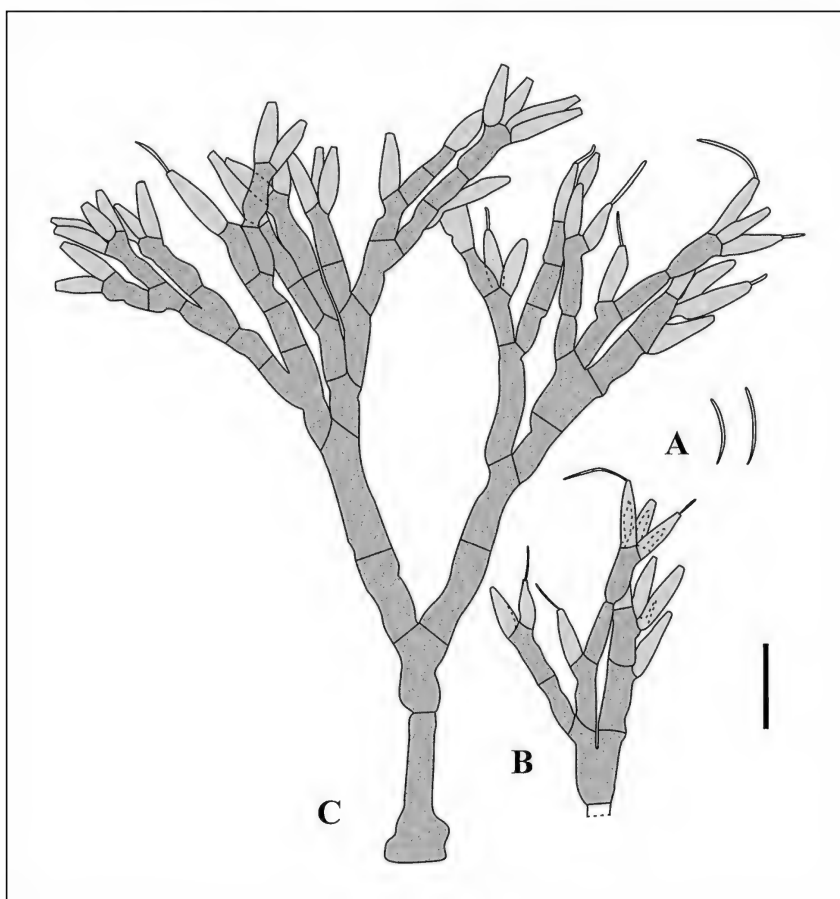


FIG. 2. *Ramiphialis ronuroensis* (holotype, CNMTf 80).

A. Conidia; B. Conidiophore, conidiogenous cells, and conidia; C. Conidiophore.

Scale bar = 20 μ m.

Jayarambhatia rhizophorae by its conidiophores with extensions, discrete phialides, and falcate conidia.

TYPE: Brazil, Mato Grosso State, Nova Ubiratã, Estação Ecológica Rio Ronuro, on decaying leaves, 11.XX.2016, coll. F.R. Barbosa (**Holotype**, CNMTf 80).

ETYMOLOGY: Latin, *ronuroensis*, refers to the place where the species was collected.

COLONIES scattered, dark brown. Mycelium superficial and immersed, composed of slightly branched, septate, smooth, brown hyphae. **CONIDIOPHORES** macronematous, mononematous, erect, straight or flexuous,

multibranched, 5–12 septate, with percurrent extensions, smooth, brown, 130–200 × 6–9 µm. The branches are dichotomous starting near the lobed basal cell. CONIDIOGENOUS CELLS monophialidic, terminal and intercalary, discrete, sometimes forming subpenicillate clusters, evident, determinate, pale brown, cylindrical to slightly ovoid, 12.5–17.5 × 5 µm. Conidial secession schizolytic. CONIDIA filiform, falcate, hyaline, unicellular, smooth, 10–18(–25) × 0.5–0.7 µm, accumulating in a white mucilaginous mass.

COMMENTS—*Atrosetaphiale* Matsush., *Jayarambhatia* J. Pratibha, and *Veramycina* Subram. superficially resemble *Ramiphialis* in possessing phialidic conidiogenous cells that produce narrow conidia. *Atrosetaphiale*, however, is distinguished by its unbranched conidiophores and lateral and terminal phialides; its type species, *A. flagelliformis* Matsush., produces cylindrical-fusiform to flagellate conidia (Matsushima 1995), in contrast to the filiform conidia characterizing *R. ronuroensis*. *Jayarambhatia* differs in its determinate conidiophores, integrated phialides with elongated narrow necks, and narrowly obclavate conidia, while the generic type, *J. rhizophorae* J. Pratibha, produces much larger conidia (30–50 × 1 µm; Pratibha 2013). *Veramycina*, the synanamorph of *Oedemium* Link, is distinguished by the production of setae, conidiophores bearing terminal short branches, terminal and lateral phialides, and cylindrical to bacillar conidia; the generic type, *V. elegans* Subram., produces much shorter conidia (1.5–3 µm; Subramanian 1993). However, *Ramiphialis* does not produce setae and has dichotomously branched conidiophores.

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